What is claimed is

1. An optical liquid crystal modulator having at least one ferroelectric liquid crystal, wherein the ferroelectric liquid crystals have a DHF mode and, at the location of the liquid crystal, exhibit an operating range of the electric field of more than 20 V/μm.

2. The optical liquid crystal modulator as recited in Claim 1, wherein the liquid crystal modulator having the DHF mode is designed as lambda/2 magnification plates which rotate in the electric field, and, in response to a single pass through the plate, tilt angles of ± 22.5 degrees are produced.

3. The optical liquid crystal modulator as recited in Claim 1 or 2, wherein the liquid crystal modulator encompasses a liquid crystalline mixture FLC-388.

4. The optical liquid crystal modulator as recited in Claim 1, 2 or 3, wherein, at a temperature of approximately T = 20.0° C, the helical pitch Po is within a range of 0.1 to 0.5.

5. The optical liquid crystal modulator as recited in Claim 4, wherein, at a temperature of approximately T = 20.0° C, the helical pitch Po is about 0.22 μm.

6. The optical liquid crystal modulator as recited in one of the preceding claims, wherein the driving frequency of the driving voltage of the liquid crystal modulator amounts to at least 10 kHz and, preferably, is above 50 kHz.

7. A method for operating an optical liquid crystal modulator having a ferroelectric liquid crystal, and, in particular, a liquid crystal modulator as recited in one of Claims 1 through 6,
wherein the ferroelectric liquid crystals have a DHF mode and are operated at the location of the liquid crystal in an operating range of the electric field of more than 20 V/μm.

8. The method for operating an optical liquid crystal modulator as recited in Claim 7,
wherein the liquid crystal modulator having the DHF mode is employed as lambda/2 magnification plates which rotate in the electric field, and, in response to a single pass through the plate, tilt angles of ± 22.5 degrees are produced.

9. The method for operating an optical liquid crystal modulator as recited in Claim 7 or 8,
wherein a liquid crystalline mixture FLC-388 is used for the ferroelectric liquid crystal.

10. The method for operating an optical liquid crystal modulator as recited in Claim 7, 8 or 9,
wherein a liquid crystal is used, whose helical pitch Po is within a range of 0.1 to 0.5 at a temperature of approximately T = 20.0° C.

11. The method for operating an optical liquid crystal modulator as recited in Claim 10,
wherein a ferroelectric liquid crystal is used, whose helical pitch Po is about 0.22 μm at a temperature of approximately T = 20.0° C.

12. The method for operating an optical liquid crystal modulator as recited in one of the preceding Claims 7 through 11,
wherein the driving frequency of the driving voltage of the liquid crystal modulator is at least 10 kHz and, preferably, is above 50 kHz.

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